ASPECTS OF THE TRAVEL ADJUSTMENT OF BLIND PERSONS

By

Samuel Finestone

Irving F. Lukoff

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FOREWORD

This pamphlet constitutes Chapter V in the book The Demand for Dog Guides and the Travel Adjustment of Blind Persons published in 1960 by the Research Center, New York School of Social Work, Columbia University.

It was felt that the general nature of the information included in this chapter called for its being issued as an independent publication. The problem of travel is a most serious one for a blind person. Information on how he makes his adjustment to this problem is of vital importance to agencies and individuals in this field.

The American Foundation for the Blind welcomes the opportunity to make this study available to a wider public. For graciously permitting us to do so, sincere appreciation is extended to the Research Center of the New York School of Social Work. We also wish to express an appreciation to the Seeing Eye, Inc., the agency that provided funds for the original research upon which this study is based.

M. Robert Barnett
Executive Director

ASPECTS OF THE TRAVEL ADJUSTMENT OF BLIND PERSONS

Introduction

In the course of this study we have collected a good deal of data describing the travel activity of blind persons. It is the purpose of this pamphlet to present a number of more salient findings in this area.

The pertinence of the presentation derives from a widely held assumption that travel adjustment plays a key role in the social, psychological and interpersonal behavior of blind persons. The performance of important social roles -- vocational, parental, student, organization member and the like -- is profoundly affected by the extent of travel activity. Whether, how, and how much a blind person travels is believed to have important implications for the concept he has of himself and the way he feels about himself.

Travel activity also affects relationships with other people. The non-travelling blind person tends to have restricted interpersonal relationships, and the blind person who travels only with the aid of other sighted persons has relationships colored by the dependence upon sighted guides. Thus, while the level of travel adjustment depends upon physical, psychological and social factors, it also makes a contribution to these factors.

It is necessary to define certain terms as they are used in relation to blind persons in this study. The term "travel" itself needs definition. The term "mobility" is often used as a synonym to describe activity in getting from place to place either within a home or outside it. In this study, "travel" is used more narrowly to signify walking and use of vehicles outside the home. Orientation is a related concept, signifying the mental mapping of the environment in relation to one's own position. Obviously, orientation is an essential component of travel.

The problem of travel cannot be discussed, as workers with the blind well know, without consideration of the degree of vision. Many persons legally defined as blind have sufficient vision and use what they have with sufficient efficiency to travel unaided and with relatively little difficulty. On the other hand, there is a major group whose degree of visual loss creates severe difficulties in travel.

This study has utilized a variety of approaches to the measurement of visual capacity. Ophthalmological ratings of visual acuity, as recorded in the register of blind persons at the New York State Commission for the Blind represent one measure. However, such ratings are recorded at the time of registration, and are not routinely modified to reflect changes in visual status. Thus, while these ratings are valuable for statistical description of a total population, there may be some bias introduced when the measures are used in investigation of relationships to other factors operative at the time of the interview.

A second approach to a vision rating was one obtained by interview. Respondents were asked whether they could perceive light, whether they were able to see moving objects, whether they could recognize people, or whether they could read print. The answers were consistent, correlated highly with the ophthalmic measures, and permitted a "visual perception" score based on self-ratings. This score is used in the sections which follow to divide respondents into "low" and "high" visual perception groups.

The mode of travel also requires attention. Travel may be carried on without aids of any kind, with non-personal aids such as a cane or dog guide, or with a personal aid; that is, a human guide. In using a human guide, the responsibilities for sensing and interpreting non-visual cues are minimal as compared with travel with cane or dog guide.

In speaking of travel performance, certain objective factors are implied -- the frequency of travel, the extensiveness of travel and the independence of travel. In this study, a travel frequency score was determined by the answers to a series of questions concerning how often the respondent travelled under various conditions. Travel extensiveness refers to the notion of distance (immediate neighborhood, more distant areas), without reference to frequency. "Independence" of travel refers to the use, or absence of use, of a human guide in familiar, or unfamiliar areas.

The next two sections of this pamphlet provide a general description of the travel performance of our respondents in the light of the visual perception score. Travel performance by high and low vision groups is also analyzed for the different modes of travel.

Succeeding sections deal with more subjective aspects of travel adjustment; with the amount and concern for travel performance on the part of the respondents, and with the nature of the decision process in selecting a mode of travel.

Travel Performance and Visual Perception

Introduction. This section is addressed to an analysis of the travel performance of our sample as it is related to the extent of visual perception. The procedure is to present the travel performance of those who fall into "low," "medium" and "high" visual perception groups.

To separate the sample into the low and high visual perception groups, self-reports were utilized. Respondents who reported they were totally blind or had light perception only, were termed the "low" visual perception group. Those who reported they could see moving objects, or recoginze people, or read print, were categorized as the "high" visual perception group.

Visual Perception and Travel Mode.* In our sample of 500, 38 per cent were in the lower visual group (light perception or total blindness) and 62 per cent in the group with more than light perception.

As for the mode of travel usually employed by those in the total sample: the largest proportion (42 per cent) report that most travel is carried on without aids of any kind, that is, without human guide, cane or dog guide. The next largest group (32 per cent) indicate that most of their travel is done with a human guide. Cane use is reported as the primary mode of travel by 19 per cent of the sample. Least often reported is dog guide use, reported by 6 per cent of the sample.

The most numerous group, those who report unaided travel, are overwhelmingly a high vision group. About 93 per cent have vision above light perception.

The next largest group, those who travel with a human guide, are mainly a low vision group. About 56 per cent have light perception only or are totally blind. Yet low visual status alone does not explain the use of a travel mode which entails minimal responsibility for use. Fully 44 per cent of the human guide users have more than light perception.

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* It should be noted that certain of the figures reported in this section reflect the fact that the sample was underweighted by half in the visual acuity range between 11/200 to 20/200. Thus, in the general population of blind persons, there would be a higher proportion in the high vision group than here reported. Moreover, dog guide users, who are characterized by low vision, would constitute a smaller proportion of the total than is indicated here. However, the relationships among the various factors discussed would not be significantly altered.

Cane users, as a group, have less vision than the human guide users, for they have 62 per cent in the low vision group. Yet they report a mode of travel which requires more independence than that of the human guide users.

Finally, dog guide users, who are the smallest group in the sample, have least vision. Some 80 per cent have light perception only or are totally blind.(Table 1)

Frequency of Travel. The frequency of travel may next be considered. For the total group, just under a quarter have "high" scores. "High" scores would indicate a level at least two-thirds of the way up a scale running from complete restriction as to frequency of travel, to complete lack of restriction. Thus, three-quarters of the group do not reach the standard of considerable frequency of travel.

Those with low visual perception scores travel less frequently than those with higher scores. However, the difference is not extreme, and indicates again that other factors in addition to sheer visual status are involved in travel performance. In our sample, 40 per cent of the low visual scores are in the low travel frequency group, as compared with 28 per cent of the high vision group. Relatively more of the high vision group have moderate travel frequency scores (46 per cent) than the low vision group (38 per cent). 21 per cent of the low vision group travel with high frequency. Only slightly more (23 per cent) of the high vision group are high frequency travellers. (Table 2)

Extensiveness of Travel. A second dimension of travel performance is extensiveness, or distance. As in the analysis of frequency, the scale runs from minumum to maximum extensiveness, with the scores divided into thirds. A score falling into the "high" extensiveness category would indicate travel in both familiar and unfamiliar areas.

The findings indicate that somewhat more than half (56 per cent) of the total group are in the "high" extensiveness category. However, as expected, there is a difference in the performance of the low and high vision groups. The low vision group have 47 per cent in the high travel extensiveness group, while the high vision group have 62 per cent. (Table 3)

Thus, while somewhat over half the total group travel with considerable extensiveness, the lower vision portion of the sample have less than half who reach this standard.

Independence of Travel. The field of service to blind persons puts a good deal of emphasis on the independence with which travel is carried on. The extent to which sighted guides are used in familiar and unfamiliar areas is a measure of dependence. Low scorers either do not travel extensively, or do not travel alone. At the upper end of the scale are those who travel to unfamiliar places by themselves. Those whose primary mode of travel is without aids would tend to score highly on this index, but even these persons might report using sighted guides on occasion. The same would be true for cane and dog guide users. Human guide travellers, by definition, would tend to score low on this index of independence.

In the total group, under a third (31 per cent) score "high" on travel independence. As might be expected, those with vision above the light perception range do proportionately better (36 per cent in the high independence group) than do those with light perception or total blindness (22 per cent). Yet, the relatively higher scores of the higher vision group do not change the fact that more than three-fifths do not reach the level of considerable independence. (Table 4)

Travel Efficiency. It may be useful to present a single composite measure of the three objective aspects of travel performance: frequency, extensiveness and independence. For this purpose, a single summary measure of travel "efficiency" was devised. Respondents who scored in the lowest third of all three aspects were placed in the "low efficiency" category. Those who scored in the upper third, or nearly so, were placed at the other extreme, "high efficiency." Scores falling between the two extremes were placed in a "medium efficiency" category.

In the entire group, regardless of visual perception, somewhat under one-fourth (23 per cent) reached "high travel efficiency," about one-half (51 per cent) reached "medium travel efficiency," and one-fourth scored in the 'low travel efficiency' group. Thus, about three-fourths of the group, whose maximum age is fifty-four, do not reach a standard of fairly unrestricted frequency, extensiveness and independence of travel.

Visual perception status has a similar relationship to travel efficiency as it has to the component aspects of frequency, extensiveness and independence. Those with vision above light perception have 28 per cent in the highest travel efficiency group as compared with the lower visual perception group, which has 16 per cent. As before, although those with higher vision do relatively better, the absolute level reached is still low. (Table 5)

Summary. About three-fourths of the sample are characterized by travel which is restricted as to frequency and independence. Somewhat less than half do not travel with considerable extensiveness but the lower vision group have more than half which is restricted as to the extensiveness of travel. On a combined measure of all three aspects, termed travel efficiency, three-fourths fall in the category of restricted travel.

While those with higher vision generally score higher as a group, three-fourths do not achieve considerable frequency, about two-fifths do not achieve considerable extensiveness, and somewhat under two-thirds do not achieve considerable independence. On the over-all measure of travel efficiency, somewhat over two-thirds do not reach the category of fairly unrestricted travel.

The tables on which these statements are based follow.

TABLE 1 TRAVEL MODE BY VISUAL PERCEPTION SCORE*

	VISUAL PERCEPTION SCORE			
Travel Mode	*Low*	*High*	*Total*	*Number*
Unaided	6.7%	93.3%	100%	(209)
Cane	62.1	37.9	100	(95)
Dog Guide	80.0	20.0	100	(30)
Human Guide	55.6	44.4	100	(162)
Homebound, Other	—	—	—	(4)
Number	(190) (38%)	(310) (62%)		(500)

TABLE 2 TRAVEL FREQUENCY BY VISUAL PERCEPTION SCORE

	VISUAL PERCEPTION SCORE		
Travel Frequency	*Low*	*High*	*Total*
Low	40.5%	28.1%	32.8%
Medium	38.4	45.8	43.0
High	21.1	22.9	22.2
No Answer	0.0	3.2	2.0
Total	100.0%	100.0%	100.0%
(No. of Cases)	(190)	(310)	(500)

TABLE 3 TRAVEL EXTENSIVENESS BY VISUAL PERCEPTION SCORE

	VISUAL PERCEPTION SCORE		
Travel Frequency	*Low*	*High*	*Total*
Low	22.6%	12.9%	16.6%
Medium	30.5	25.5	27.4
High	46.9	61.6	56.0
Total	100.0%	100.0%	100.0%
(No. of Cases)	(190)	(310)	(500)

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*Tables 1 through 5 have been tested by chi square and are significant at least at .05 level.

TABLE 4 TRAVEL INDEPENDENCE BY VISUAL PERCEPTION SCORE

Travel Independence	VISUAL PERCEPTION SCORE Low	High	Total
Low	54.2%	27.5%	37.8%
Medium	21.6	34.4	29.8
High	21.6	36.4	30.8
No Answer	2.6	1.7	1.6
Total	100.0%	100.0%	100.0%
(No. of Cases)	(190)	(310)	(500)

TABLE 5 TRAVEL EFFICIENCY BY VISUAL PERCEPTION SCORE

Travel Efficiency	VISUAL PERCEPTION SCORE Low	High	Total
Low	35.2%	18.8%	25.0%
Medium	48.4	52.1	51.2
High	15.8	27.6	23.2
No Answer	0.6	1.5	.6
Total	100.0%	100.0%	100.0%
(No. of Cases)	(190)	(310)	(500)

Travel Performance and Travel Mode

Introduction. This section turns to an examination of travel performance as it is affected by the method of travel reported by the respondents as primary. Since travel performance is also affected by visual perception, it is necessary to take this factor into account as well. To do this, the sample is first broken down into groups characterized by mode of travel. Each travel mode group is further broken down into low and high visual perception groups. It then becomes possible to compare the scores of each travel mode group with low visual perception on the measures of travel performance described previously; that is, frequency, extensiveness, independence and efficiency. The same comparisons are made for the travel mode groups with high visual perception.

Each travel mode group will be discussed in turn. Comparisons of travel performance will be made with other travel mode groups of like visual perception status. Comparisons are also made within each travel mode group as between low and high visual perception groups.

Human Guide Travellers. It has been indicated previously that those who report they travel mainly with human guides make up nearly a third of the entire sample; second in number only to those who travel without aids. This group has 44 per cent in the high visual perception group; thus it is a higher vision group than the cane or dog guide travellers, though lower than the unaided travellers.

The travel performance of the human guide travellers can be summed up very simply. It falls markedly below every other travel group on every measure of travel performance. This lowest ranking remains whether the low vision portion is compared with the other low vision travellers, or whether the high vision portion is compared with the other high vision travellers. Tables (pp. 8, 9) give a more precise picture of this general trend.

Only 1 per cent of the human guide travellers achieve high travel frequency scores, whether low vision or high vision. (Table 6) As for travel extensiveness, a third of the low vision group score high in extensiveness. Relatively more of the high vision human guide users score high in extensiveness, 40 per cent. (Table 7) Travel independence scores for the human guide travellers, as expected, are also extremely low: zero per cent for the low vision group and 4 per cent for the high vision group. (Table 8) The overall measure of travel efficiency shows zero per cent of the low vision group, and 11 per cent of the high vision group reaching high travel efficiency. (Table 9)

It may further be noted that there are rather slight differences between the low vision and high vision groups of human guide travellers. It is as if once the human guide mode of travel is depended upon, a markedly restricted pattern of travel performance is enforced, regardless of visual status. Only slight travel advantages accrue to the higher vision human guide users. It may of course be that other factors contribute both to the selection of the human guide mode, and poor travel performance.

Cane Travellers. Those who report that they travel with a cane most of the time make up just under a fifth of the sample. Their visual status, as measured by visual perception scores, is lower than human guide travelers or those who travel without aids, but higher than dog guide users.

Cane travellers rate above human guide users by wide margins in every category of travel performance, both in the low and high vision groups. However, cane travellers, dog guide users, and unaided travellers (all in the low visual category) have about the same proportion in the high travel independence group, about 42 per cent. (Table 8)

In the low vision group, cane travellers have 29 per cent in the high travel frequency category as compared with 54 per cent among dog guide users. (Table 6) They have 54 per cent in the high travel extensiveness category as compared with 71 per cent among dog guide users. (Table 7) On the overall measure of travel efficiency, they have 24 per cent in the high category; the dog guide users have 37 per cent. The differences in favor of dog guide users are even more marked when comparisons are made on each travel measure among those with high visual perception scores. However, these comparisons may not be dependable. There are only six dog guide users with high visual perception who are actually at the lowest end of the "high" visual perception group. They seem to score unusually higher and are too few for statistical conclusions to be drawn. (Table 9)

In comparisons among cane users of low and high visual perception, there is a slight advantage in favor of the low vision group so far as travel frequency is concerned. (In each case a 7 per cent difference between low and high users.) When travel independence, and the general measure of efficiency is considered, there is a somewhat larger margin in favor of the lower vision group.

This somewhat surprising finding may be a consequence of a possibly greater propensity of those with lower vision to obtain training. With training, the possibility of greater travel improvement is present, even with lower visual status. However, this explanation is to be further tested in subsequent reports.

Dog Guide Users. Those who report using dog guides constitute the smallest group of the sample (6 per cent) and the lowest vision group. As has been indicated previously, they have higher proportions in the superior travel performance categories than cane users in all but one travel measure, where the ratings are similar. Travel independence scores among the low vision cane travellers and dog guide travellers are similar.

The only group not yet discussed consist of those who report they travel mainly without aids. Comparisons here are difficult, for the visual perception characteristics of the two groups are in sharp contrast. Dog guide users are overwhelmingly a low vision group; unaided travellers are overwhelmingly a high vision group. Dog guide users have six, or one-fifth in the high vision group, while unaided travellers have fourteen or 7 per cent in the low vision group.

Both of these atypical groups score very highly on all travel measures, yet the groups are too small for dependable comparisons. The fourteen unaided travellers with low vision are not exceeded on frequency, extensiveness, independence or efficiency by any other travel mode group, but they share first rank with dog guide users on extensiveness and independence.

On the other hand, the small group of high vision dog guide users are above the high vision unaided travellers on frequency, extensiveness and efficiency, and about the same on independence. However, these comparisons, as with the low vision dog guide users and unaided travellers, cannot be termed significant because of the small size of one or the other group. It may be useful to pursue further the characteristics of unaided low vision travellers, to check further their visual status, their number and their travel and other characteristics.

Unaided Travellers. Most of the facts concerning the travel performance of unaided travellers have already been given. It is in point, however, to compare the travel performance of the numerous high vision group of unaided travellers with the high vision cane and human guide travellers. The human guide travellers are, as has been previously indicated, lowest on all travel measures, and the cane travellers markedly higher. The unaided travellers are also higher than the cane travellers on all travel measures. On travel frequency, the percentages in the high scoring group are 31 per cent to 22 per cent, on extensiveness 71 per cent to 47 per cent, on independence 51 per cent to 19 per cent, and on the general measure of efficiency 39 per cent to 17 per cent.

Summary. It is not difficult to summarize the travel performances of human guide travellers, cane travellers and dog guide users. Generally speaking, human guide users represent minimal travel performance, cane travellers achieve a midway position well above human guide users, while dog guide users are in turn markedly above both groups. The exceptions to these generalizations are minor.

The unaided travellers make comparisons complicated. It is perhaps safest to confine comparisons with cane travellers and human guide users in the high vision group. On all travel comparisons unaided travellers rank highest, perhaps because within the high visual perception group their vision is highest.

Visual perception does not differentiate consistently within each travel mode. Travel mode differences in performance are greater and more consistent than sheer visual status. The factor of training may well be of considerable importance.

TABLE 6 PERCENTAGES OF PRIMARY TRAVEL MODE GROUPS AT TRAVEL FREQUENCY LEVELS, BY VISUAL PERCEPTION

Low Visual Perception

Travel Mode	TRAVEL FREQUENCY *Low*	*Medium*	*High*	*No Answer*	*Total Percent*	*Number*
Unaided	28.6%	7.1%	64.3%	0.0%	100%	(14)
Cane	18.6	52.5	28.9	0.0	100	(59)
Dog Guide	16.7	29.2	54.1	0.0	100	(24)
Human Guide	61.1	37.8	1.1	0.0	100	(90)
Homebound, Other	—	—	—	—	—	(3)
Number	(77)	(73)	(40)	(0)		(190)

High Visual Perception

Travel Mode	TRAVEL FREQUENCY *Low*	*Medium*	*High*	*No Answer*	*Total Percent*	*Number*
Unaided	17.0%	47.2%	30.7%	5.1%	100%	(195)
Cane	25.0	52.7	22.3	0.0	100	(36)
Dog Guide	0.0	66.7	33.3	0.0	100	(6)
Human Guide	61.1	37.5	1.4	0.0	100	(72)
Homebound, Other	—	—	—	—	—	(1)
Number	(87)	(142)	(71)	(10)		(310)

TABLE 7 PERCENTAGES OF PRIMARY TRAVEL MODES AT TRAVEL EXTENSIVENESS LEVELS, BY VISUAL PERCEPTION

Low Visual Perception

Travel Mode	TRAVEL EXTENSIVENESS *Low*	*Medium*	*High*	*Total Percent*	*Number*
Unaided	7.1%	21.5%	71.4%	100%	(14)
Cane	15.3	30.6	54.1	100	(59)
Dog Guide	4.2	25.0	70.8	100	(24)
Human Guide	31.2	35.5	33.3	100	(90)
Homebound, Other	—	—	—	—	(3)
Number	(43)	(58)	(89)		(190)

High Visual Perception

Travel Mode	TRAVEL EXTENSIVENESS *Low*	*Medium*	*High*	*Total Percent*	*Number*
Unaided	6.4%	22.6%	71.0%	100%	(195)
Cane	19.4	33.3	47.3	100	(36)
Dog Guide	0.0	16.7	83.3	100	(6)
Human Guide	29.2	30.5	40.3	100	(72)
Homebound, Other	—	—	—	—	(1)
Number	(40)	(79)	(191)		(310)

TABLE 8 PERCENTAGES OF PRIMARY TRAVEL MODE GROUPS AT TRAVEL INDEPENDENCE LEVELS BY VISUAL PERCEPTION

Low Visual Perception

	TRAVEL INDEPENDENCE					
Travel Mode	*Low*	*Medium*	*High*	*No Answer*	*Total Percent*	*Number*
Unaided	28.6%	28.6%	42.8%	0.0%	100%	(14)
Cane	20.4	37.4	42.2	0.0	100	(59)
Dog Guide	21.0	25.0	41.5	12.5	100	(24)
Human Guide	87.8	10.0	0.0	2.2	100	(90)
Homebound, Other	—	—	—	—	—	(3)
Number	(103)	(41)	(41)	(5)		(190)

High Visual Perception

	TRAVEL INDEPENDENCE					
Travel Mode	*Low*	*Medium*	*High*	*No Answer*	*Total Percent*	*Number*
Unaided	10.8%	39.0%	51.2%	0.0%	100%	(195)
Cane	22.3	55.5	19.4	2.8	100	(36)
Dog Guide	0.0	33.3	50.0	16.7	100	(6)
Human Guide	81.9	13.9	4.2	0.0	100	(72)
Homebound, Other	—	—	—	—	—	(1)
Number	(86)	(108)	(113)	(3)		(310)

TABLE 9 PERCENTAGES OF PRIMARY TRAVEL MODE GROUPS AT TRAVEL EFFICIENCY LEVELS, BY VISUAL PERCEPTION

Low Visual Perception

	TRAVEL EFFICIENCY					
Travel Mode	*Low*	*Medium*	*High*	*No Answer*	*Total Percent*	*Number*
Unaided	21.5%	35.7%	42.8%	0.0%	100%	(14)
Cane	16.9	57.7	25.4	0.0	100	(59)
Dog Guide	8.4	54.1	37.5	0.0	100	(24)
Human Guide	55.5	44.5	0.0	0.0	100	(90)
Homebound, Other	—	—	—	—	—	(3)
Number	(67)	(92)	(30)	(1)		(190)

High Visual Perception

	TRAVEL EFFICIENCY					
Travel Mode	*Low*	*Medium*	*High*	*No Answer*	*Total Percent*	*Number*
Unaided	6.7%	54.4%	38.9%	0.0%	100%	(195)
Cane	16.7	64.0	16.7	2.6	100	(36)
Dog Guide	0.0	50.0	50.0	0.0	100	(6)
Human Guide	52.8	44.4	1.4	1.4	100	(72)
Homebound, Other	—	—	—	—	—	(1)
Number	(58)	(164)	(86)	(2)		(310)

The Concern With Travel

Introduction. The objective findings in our sample of 500 blind persons have suggested widespread deficiency in travel function. This section deals with some of the subjective aspects of travel function. To what extent, for example, do blind persons express satisfaction with their level of performance? How much motivation is there for active consideration of alternatives to present modes of travel? How much thought is given to the choice of the present mode of travel? The answers to these questions should describe some aspects of the kind of concern which blind persons express concerning travel.

Satisfaction with Present Travel Performance. Somewhat under half (about 46 per cent) express little or no satisfaction; slightly over a third (35 per cent) express moderate satisfaction; and slightly under a fifth (19 per cent) are highly satisfied. This picture of extensive dissatisfaction is broadly similar at both low and high visual acuity levels. (Table 10)

Motivation for Improvement of Travel. This general picture of poor travel performance, considerable travel difficulty, and extensive dissatisfaction is not translated into active consideration of improvement in travel performance. Respondents were asked a series of questions indicating possible desire for change or reasons for change. The responses of two out of three indicate little or no motivation for change (35 per cent no motivation, 31 per cent slight motivation). About 10 per cent indicated a good deal of motivation and about 8 per cent indicated a great deal of motivation for improvement of travel performance. (Table 11)

Consideration Given Choice of Mode of Travel. A closely related question concerns the amount of thought which went into the selection of the current mode of travel. Respondents were asked whether they had given a deal of thought; a little thought; or no thought to the choice of their mode of travel. Fewer than one in four

(24 per cent) gave serious consideration to the choice of mode; 14 per cent gave little thought; while 51 per cent gave no particular thought to the decision on travel mode. (Information is not available for the remainder.) Considering the special characteristics of the sample, namely, that it is confined to the active years between fifteen and fifty-five and that the upper range of visual acuity was purposely undersampled, it might be expected that as important a step in travel adjustment as the choice of travel mode would receive considerable attention. Instead, for the most part, such decisions "just happen." (Table 12)

Summary. The over-all picture of travel adjustment may be broadly outlined as follows: Objectively, the potential for fully satisfactory travel performance is not reached by most blind persons. Moreover, there is a general trend of dissatisfaction with travel performance. Yet the dissatisfaction is not translated into active efforts to improve travel performance, or to give considerable thought to the selection of a travel mode. What is described is a low level of performance and satisfaction, a situation which seems to be accepted by the majority of blind persons as part of the limitations imposed by blindness. This is, of course, an interpretation of one side of the situation. The other side is that there may be insufficient stimulation and help because of over-protective attitudes of family and community, and because of the insufficiency of highly skilled resources for rehabilitation.

The statements of findings are based on the following tables.

TABLE 10 SATISFACTION WITH TRAVEL PERFORMANCE, BY VISUAL ACUITY

	SATISFACTION WITH TRAVEL			
Visual Acuity	*No or Little*	*Moderate*	*High*	*Percent*
5/200 or less	47.3%	32.3%	20.4%	100%
More than 5/200	43.0	40.1	16.9	100
Total	45.8	35.2	19.2	100
Number	(229)	(175)	(96)	(500)

TABLE 11 MOTIVATION FOR TRAVEL CHANGE

None	35.0%
Slight	31.0
Some	9.8
Good Deal	16.2
Great Deal	8.0
Total	100.0%
No. of Cases	(500)

TABLE 12 AMOUNT OF THOUGHT GIVEN TO CHOICE OF CURRENT TRAVEL MODE

Great deal of thought	24.2%
Little	14.0
None	50.6
Don't know, No answer	10.8
No information	.4
Total	100.0%
No. of Cases	(500)

The Decision Process in the Choice of Mode of Travel

Introduction. Any analysis of the process through which a particular mode of travel is chosen must be preceded by mention of a previous finding; namely, that for most persons this decision process is vague and indeterminate. Only for a minority are there discussions about modes of travel and conscious weighing of alternatives.

The findings to be presented are, therefore, based upon the reports of slightly under one-fourth of the sample. These respondents reacted to a series of open-ended questions and probes aimed at exploring all factors possibly involved in travel decisions. Thus, recall was assisted without influencing responses in a particular direction.

One set of factors found to be involved in travel mode choices for some respondents included changes in health or visual acuity. For example, a person who travelled without aids may have found that deteriorating vision required a shift to some form of aided travel; that is, with cane, dog guide or human guide. Physical debility may have occasioned the shift from some other mode of travel to travel with human guide.

Other sets of factors are suggested by replies given in terms of dissatisfaction with the efficiency or impracticality of a previous mode of travel. Thus, a cane traveller might decide that there was greater safety and speed with a dog guide, or human guide. A human guide traveller might become dissatisfied with dependence upon other persons whenever leaving the home. Quite similar in content, though slightly different in form, were replies which stressed the attractiveness of the new mode of travel. The reasons for attractiveness of the new mode tend to correspond inversely to the reasons for dissatisfaction with the old.

Personal influences were often reported to intervene in the choice of mode of travel. For example, an agency worker might suggest and make arrangements for cane travel training for a person who had travelled with a human guide.

Situational changes were often relevant. A blind person may have experienced a change of employment or residence requiring more extensive travel which could no longer be carried on without an aid, such as dog guide or cane.

While each of these factors are involved for some blind persons for whom the decision process is an active one, the question is raised as to their relative distribution.

General Reasons for Travel Mode Selection. Personal influences were cited by the group of respondents (24 per cent) as being involved in the choice of travel mode. Next in importance was dissatisfaction with the old mode of travel (18 per cent) followed closely by attraction of the new mode, cited by 16 per cent. Deterioration of vision was reported by 15 per cent to have impelled a change of travel mode. Situational changes, such as employment or residence shift, death of a family member who previously acted as a guide, were reported by nearly 14 per cent, and changes in general health requiring change in mode of travel by nearly 2 per cent. The totals exceed 100 per cent, since some respondents gave more than one reason. (Table 13)

This broad categorization of reasons suggests elaboration in two directions. One such direction is the specification of reasons by the particular mode of travel finally selected. The other direction is more detailed analysis of the nature of personal influences. The next two sub-sections are directed to these elaborations.

Amount of Thought Given to Choice of Travel Mode. In order to gain further understanding of factors involved in the decision process, the sample was first sorted out into those who had and who had not undertaken travel training. Presumably, those who undertook training gave more indication of concern for travel function than those who did not. Within these two groups, respondents were grouped by their current mode of travel. It was possible to sort out the reasons for the various groups involved.

It is of interest, first, to report that 147, or about 29 per cent of the sample, had ever undertaken training. Thus, less than a third of a sample of blind persons in the active years between fifteen and fifty-five had ever undertaken travel training of any duration, or quality. This finding needs to be viewed against the assumption held by persons in the field of service to the blind; namely, that travel training offered by skilled trainers is necessary to the achievement of desirable travel performance.

Persons who underwent training are three times as likely to have given a great deal of thought to choice of travel mode than those who have not, 48 per cent to 14 per cent. Also, those who underwent training in the use of dog guides are even more likely to have given a great deal of thought to their decision, 63 per cent. Those who undertook cane travel training include 41 per cent who thought a great deal about the choice of mode, whereas cane travellers who have not had training include 33 per cent who gave a great deal of thought to the choice of mode.

The untrained cane travellers may be compared with the untrained users of human guides, who are much less likely, 14 per cent, to have given a great deal of thought to travel mode. Those who travel without aids of any kind, and who have not had travel training, include the smallest portion classified as giving a great deal of thought to choice of travel mode. However, those who travel without aids include much the largest proportion of those who have sufficient vision (even though legally blind) so that travel is not a problem is the same sense as for those with lower visual acuity or total blindness.

Thus, the general trend of lack of deliberation over choice of mode of travel is deviated from by nearly half of those who have had any type of travel instruction, and by two-thirds of those who have undertaken instruction in the use of a dog guide. Those without training, who constitute two-thirds of our sample, are responsible for the finding of widespread failure to give a great deal of conscious attention to the choice of mode of travel. (Table 14)

Reasons for Choice of Mode, by Mode of Travel. The question may now be addressed as to the reasons for choice of mode of travel among these travel groups. Relative differences appear when trained and untrained groups are compared. Thus, the trained groups are much more likely to list personal influences as a reason for choice of mode of travel than are the untrained groups, 35 per cent to 19 per cent. The situation is similar for the reasons of dissatisfaction with old mode, 34 per cent to 12 per cent; with attraction to new mode, 29 per cent to 11 per cent, and with external changes in situation, 22 per cent to 10 per cent. In large part these differences exist simply because the untrained groups tend to give fewer reasons of any kind, since they tend to give much less thought to the decision process. However, vision changes are listed by approximately the same proportion (17 per cent) as a reason for adopting the current mode of travel, and health changes are listed by few in either group.

When particular modes of travel are examined, other differences appear. The predominant reasons among those who have been trained in the use of dog guides is dissatisfaction with the old mode of travel, 46 per cent, although other reasons are also given. Among trained cane travelers, the predominant reason for selection of mode is "personal influences," 36 per cent. Among untrained cane travellers, "personal influences" is also the predominant reason, but to an even higher degree, 47 per cent.

Among those who travel with a human guide, the reason listed by the largest proportion is simply "changes in vision" (25 per cent). It may be noted that this type of reason is much more unspecific and unselective than dissatisfaction with old mode, or attraction to new mode. In this comparison, as with many others, those who travel with human guides seem less motivated to change, more dependent, than those who travel with non-personal aids (cane and dog). The situation is not very different for those who travel without aids of any kind, generally a high vision group. They, too, report that changes in vision are responsible for the adoption for their mode of travel. (Table 15)

The situation may be broadly summarized as follows, so far as differences in reason for adoption of mode of travel are concerned. Persons trained in the use of dog guides (there are no untrained dog guide users in the sample) and to a lesser extent cane travellers, are distinguished from human guide travellers and persons who travel unaided. The push of dissatisfaction and the pull of more advantageous methods of travel are frequently cited. Enviromental pressures requiring readjustment are associated with the use of dog guides, and to a lesser extent also among cane travellers. Personal influences are particularly important to these two groups, in contrast to those who rely on human guides or travel unaided.

Sources and Types of Personal Influence. We may now examine more closely the nature of personal influences upon the decision process, a factor particularly important to cane and dog guide travellers. In this subsection will be examined the kinds of influences exerted and how these vary with the persons reported to exercise this influence.

In the comments made by respondents, three broad kinds of personal influences emerged. First, a group of respondents reported that they met persons whose independence and performance impressed them with the potentialities that could be achieved by blind persons like themselves. These statements were classified under "Role Model." Respondents also referred to persons who encouraged them by words (rather than by example). For example, statements made by others may have encouraged the blind person to believe that he could still lead a full life, These references were classified under "General Encouragement." Finally respondents spoke of getting specific information as to how and where to get travel services or training. These statements were classified as "Specific Referrals."

Approximately 145 (29 per cent) gave one or more instances of personal influences. Most frequent was "Specific Referral," reported by 60 per cent of the 145. In these instances, specific information or arrangements were reported. Next most frequently, "General Encouragement" was reported, either referring to all phases of adjustment, or referring to travel independence in general. The "Role Model' type of influence was reported in about 12 per cent of the instances where personal influence was described. Most often, family members are cited as the source of personal influences (36 per cent of all such sources). These are followed by 28 per cent by blind friends, 9 per cent for sighted friends and 13 per cent by miscellaneous others. (Table 16)

Differences appear in the type of influence exerted by these groups. Family members, somewhat surprisingly, are noted in 55 per cent of the citations concerning them to make specific referrals, and in 30 per cent of the citations to provide general encouragement. Agency personnel citations have a more marked proportionate emphasis on specific referrals (74 per cent) and somewhat less weighty a secondary emphasis on general encouragement (21 per cent). Blind friends constitute the only group, even though smaller than the others, for whom the predominant type of influence is that of role model (48 per cent). Indeed, almost all the references to role models appear in connection with blind friends, who by their behavior, serve as examples for the respondents. In one-third of the citations concerning blind friends, they are reported to influence through specific referrals, and in 14 per cent of the instances to provide general encouragement. There are only fourteen references to sighted friends as sources of influence; these are divided between specific referrals and slightly fewer instances of general encouragement. (Table 17)

Thus, specific referrals and general encouragement are provided by all groups. However, blind friends serve almost uniquely as role models, whose example is important in influencing behavior.

TABLE 13 REASONS GIVEN FOR ADOPTING PRESENT MODE OF TRAVEL

(All Cases)

	Percentage of Sample*
Physical Changes:	
Health	1.8%
Vision	15.0
Attitudes to Travel Mode:	
Dissatisfaction with old mode	18.4
Attraction of new mode	16.2
External Influences:	
Environmental changes	13.6
Personal influences	24.0
Number of Cases	(500)

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*Percentages do not total 100.0% because some respondents gave more than one reason, and some gave no reason.

TABLE 14 AMOUNT OF THOUGHT GIVEN TO CHOICE OF TRAVEL MODE BY TYPE OF MODE, FOR TRAINED AND UNTRAINED RESPONDENTS

Thought Given To Choice	*Underwent Training*			*Did Not Undergo Training*			
	Dog Guide	*Cane*	*All Training**	*Cane*	*Unaided*	*Human Guide*	*All No Training*
Great Deal	62.8%	41.1%	47.6%	33.4%	9.7%	14.3%	14.4%
Little	14.0	20.0	17.0	20.0	12.0	11.3	12.8
None	23.2	34.7	32.0	40.0	58.3	64.6	58.4
Don't Know; No Answer	0.0	4.2	3.4	4.4	20.0	8.3	13.6
No Information	0.0	0.0	0.0	2.2	0.0	1.5	0.8
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Number of Cases	(43)	(95)	(147)	(45)	(175)	(133)	(353)

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*The number of cases in this column is greater than the sum of dog guide trainees and cane travelers, since it includes 9 persons who trained in unaided travel.

TABLE 15 REASONS FOR CHOICE OF TRAVEL MODE FOR TRAINED AND UNTRAINED RESPONDENTS*

Reasons For Choice	*Training*			*No Training*			
	*Dog** Guide*	*Cane*	*All Training*	*Cane*	*Unaided*	*Human Guide*	*All No Training*
Physical Changes:							
Health	2.3%	0.0%	.7%	6.7%	0.0%	3.8%	2.3%
Vision	7.0	16.8	12.9	11.1	12.0	24.8	16.7
Attitudes to Modes:							
Dissatisfaction with Old Mode	46.5	29.5	34.0	37.7	6.3	10.5	11.9
Attraction to New Mode	34.9	25.3	29.3	26.7	8.6	8.3	10.8
External Influences:							
External Change	34.9	16.8	22.4	17.8	7.4	10.5	9.9
Personal Influences	34.9	35.8	35.4	46.7	13.1	18.0	19.3
(Number of Cases)	(43)	(95)	(147)***	(45)	(175)	(133)	(353)

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*Percentage does not equal 100% because some persons gave more than one reason for choice of mode and some gave none.

**"Dog Guide" includes persons who trained in the use of a dog but never travelled with one.

***Includes 9 cases of training in unaided travel.

TABLE 16 TYPE OF PERSONAL INFLUENCES REPORTED BY RESPONDENTS

Type of Influence	*Percentage of Persons**
Role Model	11.7%
General Encouragement	31.0
Specific Referral	60.0
Other	4.1
(Number of Cases)	(145)

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*Percentages do not total 100.0% since respondents could name more than one type of influence.

TABLE 17 TYPE OF INFLUENCE BY TYPE OF PERSON INFLUENCING CHOICE OF TRAVEL MODE

(for those with visual acuity of 5/200 or less)

	Type of Person Who Influenced Choice of Travel Mode				
*Type of Influence**	*Family Member*	*Blind Friend*	*Sighted Friend*	*Agency Person*	*Other*
Role Model	5.5%	47.6%	0.0%	4.8%	10.0%
General Encouragement	29.1	14.3	42.9	21.4	50.0
Specific Referral	54.5	33.3	57.1	73.8	35.0
Unclassified, other	7.3	4.8	0.0	0.0	5.0
No Information	3.6	0.0	0.0	0.0	0.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%
(Number of Cases)	(55)	(21)	(14)	(42)	(20)

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*Some persons were reported to have exerted more than one type of influence.

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